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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Carl Woods

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EXAMINER

WATSON, JOY L

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/817,620	Applicant(s) WOODS, CARL	
	Examiner JOY WATSON	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,9-15 and 21-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,9-15 and 21-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed January 7, 2008 have been fully considered but they are not persuasive.

In response to applicant's argument that Taniyama does not teach all of the new limitations of claim 1, the examiner respectfully disagrees. '479 teaches an apparatus for processing a substrate with a fluid meniscus to be applied to a surface of the substrate (abstract), comprising: a docking surface (13 and 14) oriented adjacent to and beside an edge of the substrate (W), the docking surface (13 and 14) being coplanar with the substrate (W) (Fig. 13) (col. 6 lines 20-32, Fig. 2). '479 teaches the apparatus a coupon magazine (7b) for holding the docking station (20) that includes the docking surface (13 and 14) (Fig. 13, col. 6 lines 20-32). The transition interface is the space defined by one of the interior wall of the coupon magazine (air) while the bottom wall holds the docking surface (13 and 14). "Providing a transition interface to allow the fluid meniscus to enter and exit the surface of the substrate, the transition interface being spaced apart from the substrate" is intended use. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

In response to applicant's argument that feature 14 of '479 encircles the entire wafer the examiner respectfully disagrees (Fig. 3). Feature 14 encircles the wafer approximately 270 degrees on the lower portion of the page.

Formalities

2. Claims 3, 6-8 and 16-20 have been cancelled. Claims 1, 4, 5 and 11 are currently amended. Claims 21-28 are new and this is the first correspondence regarding the new claims.

Specification

3. Amendments to the Specification submitted January 7, 2008 have been accepted.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 11 and 28 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear in Claims 11 and 28 what is coplanar. For purposes of examination the docking surface and the substrate are coplanar.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 4, 5, 12, 13, 15 and 21-26 rejected under 35 U.S.C. 102(b) as being anticipated by Taniyama et al. (US Patent 6,247,479 known hereafter as '479).

Claim 1

'479 teaches an apparatus for processing a substrate with a fluid meniscus to be applied to a surface of the substrate (abstract), comprising: a docking surface (13 and 14) oriented adjacent to and beside an edge of the substrate (W), the docking surface (13 and 14) being coplanar with the substrate (W) (Fig. 13) (col. 6 lines 20-32, Fig. 2).

'479 teaches the apparatus a coupon magazine (7b) for holding the docking station (20) that includes the docking surface (13 and 14) (Fig. 13, col. 6 lines 20-32). The transition interface is the space defined by one of the interior wall of the coupon magazine (air) while the bottom wall holds the docking surface (13 and 14). "Providing a transition interface to allow the fluid meniscus to enter and exit the surface of the substrate, the transition interface being spaced apart from the substrate" is intended use. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art

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apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

Claim 2

'479 teaches the apparatus according to Claim 1 and additionally teaches that the docking surface (14) defines a docking station (20) for the fluid meniscus (Fig. 13, col. 6 lines 20-32, col. 9 lines 23-32, col. 13 lines 1-10).

Claim 4

'479 teaches the apparatus according to Claim 1, and additionally teaches that the docking surface (13 and 14) has a radial contour that matches a radial contour of the substrate (W) where the radial contour of the docking surface does not fully encircle the substrate (col. 6, lines 20-32, Fig. 2) (See Fig. 3 below).

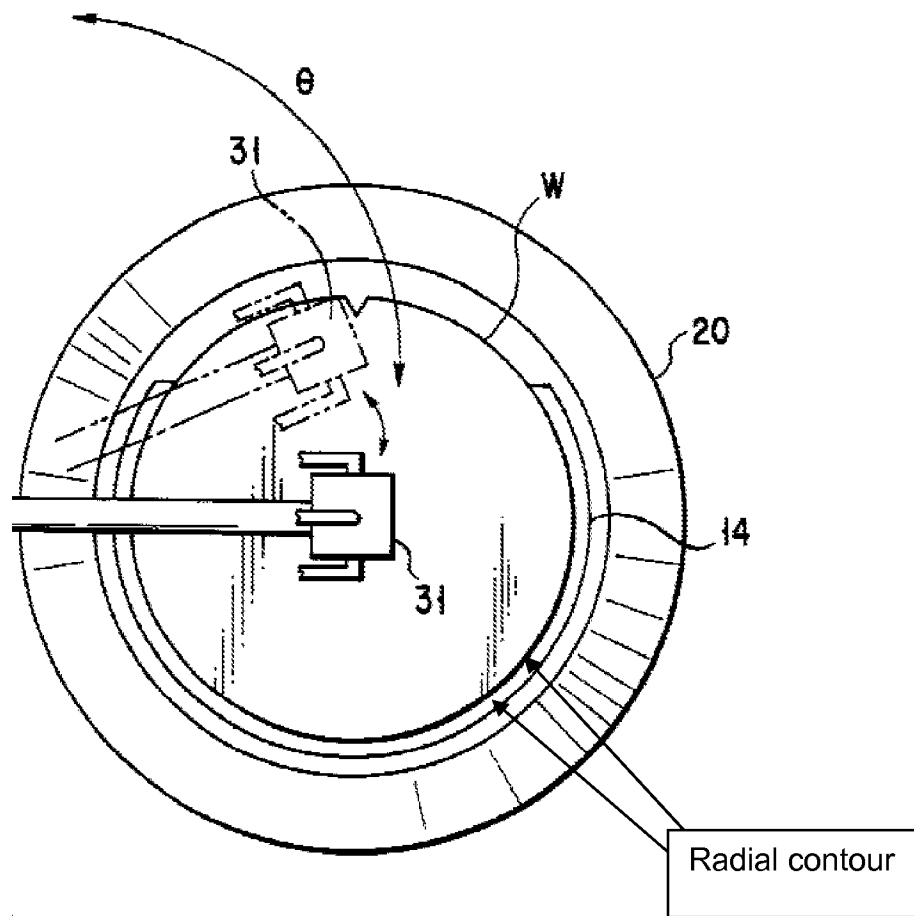


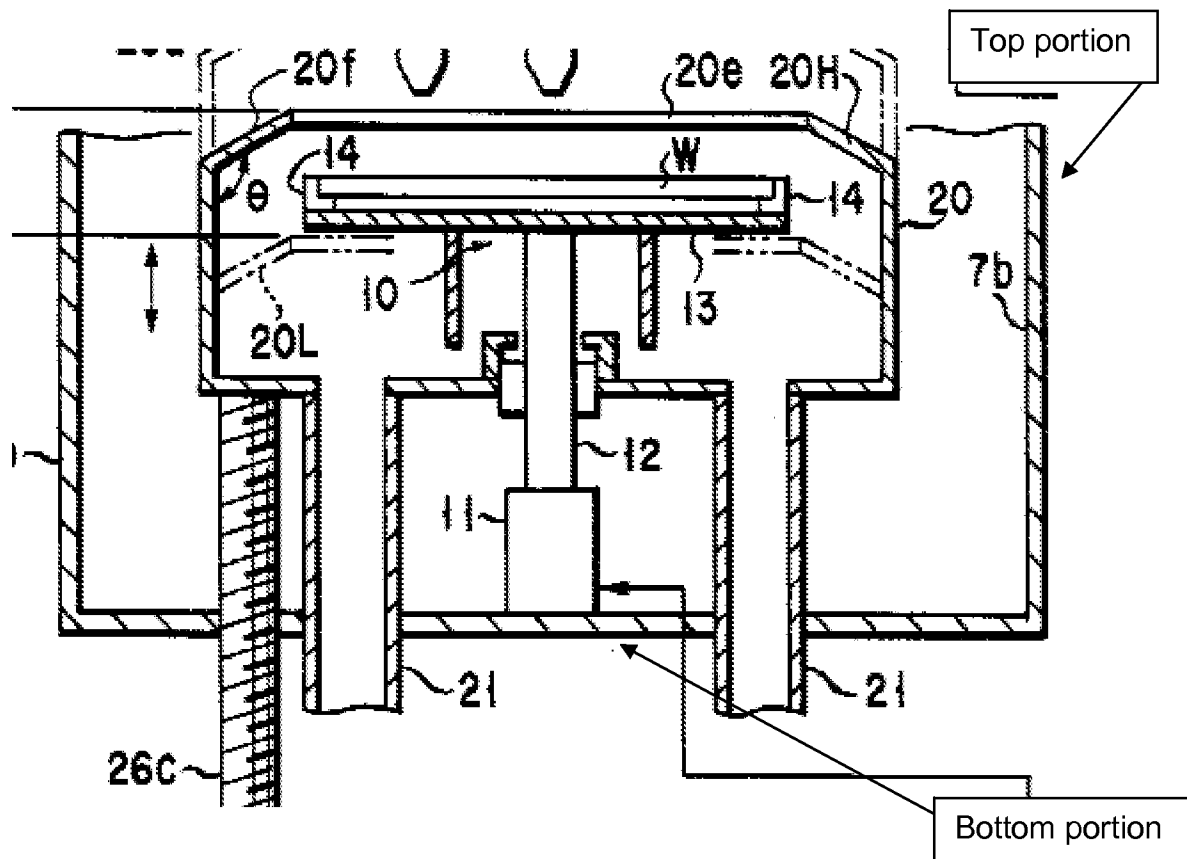
FIG. 3

Claim 5

'479 teaches an apparatus for processing a substrate with a fluid meniscus to be applied to a surface of the substrate (abstract), comprising: a docking surface (13 and 14) oriented adjacent to and beside an edge of the substrate (W), the docking surface (13 and 14) being coplanar with the substrate (W) (Fig. 13) (col. 6 lines 20-32, Fig. 2).

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'479 teaches the apparatus a coupon magazine (7b) for holding the docking station (20) that includes the docking surface (13 and 14) (Fig. 13, col. 6 lines 20-32). The transition interface is the space defined by one of the interior wall of the coupon magazine while the bottom wall holds the docking surface (13 and 14). The coupon magazine (7b) has a top and bottom portion (see figure below). '479 teaches the apparatus according to Claim 1, and additionally teaches that the docking surface (13 and 14) has a radial contour that matches a radial contour of the substrate (W) where the radial contour of the docking surface does not fully encircle the substrate (col. 6, lines 20-32, Fig. 2) (See Fig. 3 below). "Providing a transition interface to allow the fluid meniscus to enter and exit the surface of the substrate, the transition interface being spaced apart from the substrate" is intended use. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).



Claim 12

'479 teaches the apparatus according to Claim 5 and additionally teaches a leveling mechanism (23) configured to move the docking station (20) to be substantially coplanar with the substrate (W) (col. 15 lines 35-42, Fig. 17). The leveling mechanism (23) is part of the docking station (20). "Configured to move the docking station to be substantially coplanar with the substrate" is intended use. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be

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employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

Claim 13

'479 teaches the apparatus according to Claim 12 and additionally teaches where the leveling mechanism (23) is configured to move the docking station (20) in a vertical plane (col. 12 lines 21-30).

Claim 15

'479 teaches the apparatus according to Claim 5, wherein the coupon magazine includes a window (20e, Fig. 13, col. 12 lines 21-31).

Claim 21

'479 teaches a substrate processing apparatus comprising a coupon assembly (7b) that holds the docking station (20) where the docking station (20) has a curved surface for defining a transition interface to the substrate. The apparatus of '479 also has a coupon magazine mount (26c) which holds the coupon assembly (7b). The coupon magazine mount holds the curved docking surface (20f and 20h) of the docking station adjacent and coplanar to the surface of the substrate (Fig. 13, col. 7 lines 57-67, col. 6 lines 20-50).

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Claim 22

'479 teaches the apparatus according to Claim 21 additionally teaches that a leveling mechanism is part of the coupon magazine mount (26c) and is capable of placing the docking station and the curved docking surface in a coplanar orientation (col. 12 lines 10-31). Regarding the recitation

“the leveling mechanism providing adjustment of the docking station so as to place curved docking surface in the coplanar orientation”, this recitation is a statement of intended use which does not patentably distinguish over '479 since '479 meets all the structural elements of the claim(s) and is capable of “providing adjustment of the docking station so as to place curved docking surface in the coplanar orientation” if so desired. See MPEP 2114.

Claim 23

'479 teaches the apparatus of claim 21 and additionally that the docking station which has an exterior and an interior portion and defines an opening. The exterior portion has sides (21) for connecting to the coupon assembly (7b) and a side that includes the curved docking surface (20f and 20h) (Fig. 13).

Claim 24

'479 teaches the apparatus of claim 21 and implicitly teaches that the docking station (20) and the substrate are approximately the same thickness (fig. 13).

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Claim 25

'479 teaches the apparatus according to Claim 23 and additionally teaches that the coupon assembly (7b) is a casing (col. 10 lines 56-65). A casing inherently has top and bottom portions that are configured to hold the sides of the coupon assembly.

Claim 26

'479 teaches the apparatus according to Claim 21 wherein the adjacent separation defines a separation between the substrate (w) and the curved docking surface (20f and 20h, Fig. 13).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
10. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over '429.

Claim 27

'479 teaches the apparatus of claim 26, but does not explicitly teach a distance between the substrate and the curved docking surface. In Figure 13, it is understood by one of ordinary skill in the art that the curved docking surface is capable of being moved vertically with respect to the wafer. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention that the vertical distance between the docking surface and the wafer is between 0.001 mm and 0.1 mm when the docking surface is moving from below the wafer to above the wafer.

11. Claim 14 rejected under 35 U.S.C. 103(a) as being unpatentable over '479 as applied to claim 14 above, and further in view of Brunk et al. (US Patent 5,305,502 known hereafter as '502).

Claim 14

'479 teaches the apparatus according to Claim 12, additionally it explicitly teaches a leveling mechanism (23) to vertically move the cup (20) (col. 12 lines 8-31). Although

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'479 does not explicitly teach that the leveling mechanism includes a screw mechanism to move a ball detent vertically it does implicitly teach that the screw mechanism (26c) is attached to the docking station (20). A person of ordinary skill in the art, upon reading the reference would also have recognized the desirability using a leveling mechanism. '502 teaches a leveling mechanism which includes a screw (16') configured to move a ball detent (424) which moves the chamber (80") in a vertical direction (col. 5 lines 24-62). Both references teach moving an object vertically. Thus, it would have been obvious to a person of ordinary skill in the art to try the leveling mechanism of '502 in an attempt to provide an improved mechanism for vertically moving the ball detent, as a person with ordinary skill has good reason to pursue the known options within his or her technical grasp. In turn because the apparatus includes a leveling mechanism in which the screw is configured to move a ball detent vertically is predicted by prior art, and the apparatus claimed would have been obvious to one of ordinary skill in the art.

12. Claim 9-10 is rejected under 35 U.S.C. 103(a) as being unpatentable over '479 as applied to claim 5 above, and further in view of Oya et al. (US PG Pub 2002/0115024 A1 known hereafter as '024). (Raghavan et al. (US Patent 6,162,302 known hereafter as '302) is cited as evidence regarding claim 10.)

Claim 9

'479 teaches the apparatus according to Claim 5, but does not teach that the docking station (20) (part of a substrate washing apparatus) is a quartz material. '024 teaches

that quartz is a known material for substrate washing apparatus (p. 1 paragraph 0014).

Rationale: The claim would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention. It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the material of the docking station of '479 with quartz as taught by '024, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Claim 10

'479 teaches the apparatus according to Claim 5, and '024 teaches that the docking station can be made of quartz as discussed in Claim 9. Quartz is a hydrophilic material ('302 col. 5 lines 27-43).

13. Claims 11 and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over '479 as applied to claim 5 above, and further in view of Kimura et al. (US PG Pub 2001/0029150 known hereafter as '150).

'479 teaches the apparatus according to Claim 5 and additionally teaches pins coplanar to the wafer used to align the wafer properly into position spaced apart from the docking surface (col. 15 lines 35-42). '479 does not teach rollers for positioning the wafer. '150 teaches rollers (130) used to hold the substrate into position during cleaning (paragraph 90). Because both '479 and '150 teach a part of a cleaning apparatus designed to align

the substrate for cleaning, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the pins of '479 with the rollers of '150 to achieve the predictable result of aligning the substrate for cleaning.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOY WATSON whose telephone number is (571)270-1267. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph L. Perrin/
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Art Unit 1792

/J. W./
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